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PCT/US2004/02323

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From the INTERNATIONAL BUREAU

PCT

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
LOS ANGELES

NOTIFICATION CONCERNING
TRANSMITTAL OF COPY OF INTERNATIONAL
PRELIMINARY REPORT ON PATENTABILITY
(CHAPTER I OF THE PATENT COOPERATION
TREATY)

(PCT Rule 44bis.1(c))

To:

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Blakely Sokoloff Taylor & Zafman
12400 Wilshire Boulevard
7th Floor
Los Angeles, CA 90025
ETATS-UNIS D'AMERIQUE

PCT 27

FEB 17 2006

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NO DOCKETING REQUIRED
N.A.

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|---|---|---|
| Date of mailing (day/month/year) 09 February 2006 (09.02.2006) | | |
| Applicant's or agent's file reference P16418PCT | | IMPORTANT NOTICE |
| International application No. PCT/US2004/023238 | International filing date (day/month/year) 16 July 2004 (16.07.2004) | Priority date (day/month/year) 29 July 2003 (29.07.2003) |
| Applicant INTEL CORPORATION | | |

The International Bureau transmits herewith a copy of the international preliminary report on patentability (Chapter I of the Patent Cooperation Treaty)

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| The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland | Authorized officer Nora Lindner |
| Facsimile No.+41 22 740 14 35 | Facsimile No.+41 22 338 89 65 |

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

| | | | |
|--|--|--|------------------|
| Applicant's or agent's file reference P16418PCT | FOR FURTHER ACTION | | See item 4 below |
| International application No. PCT/US2004/023238 | International filing date (<i>day/month/year</i>) 16 July 2004 (16.07.2004) | Priority date (<i>day/month/year</i>) 29 July 2003 (29.07.2003) | |
| International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237 | | | |
| Applicant INTEL CORPORATION | | | |

- This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).
- This REPORT consists of a total of 6 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

- This report contains indications relating to the following items:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Box No. I | Basis of the report |
| <input checked="" type="checkbox"/> Box No. II | Priority |
| <input type="checkbox"/> Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> Box No. VI | Certain documents cited |
| <input type="checkbox"/> Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> Box No. VIII | Certain observations on the international application |

- The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

| | | |
|---|--|---|
| The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 740 14 35 | | Date of issuance of this report 30 January 2006 (30.01.2006) Authorized officer Nora Lindner Telephone No. +41 22 338 89 65 |
|---|--|---|

PATENT COOPERATION TREATY

REC'D 15 DEC 2004

WIPO

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From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/US2004/023238

International filing date (day/month/year)
16.07.2004

Priority date (day/month/year)
29.07.2003

International Patent Classification (IPC) or both national classification and IPC
G06F12/08, G06F12/12

Applicant
INTEL CORPORATION

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2004/023238

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2004/023238

Box No. II Priority

1. ☒ The following document has not been furnished:

☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. ☐ It has not been possible to consider the validity of the priority claim because a copy of the priority document was not available to the ISA at the time that the search was conducted (Rule 17.1). This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

4. Additional observations, if necessary:

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | |
|-------------------------------|-------------|------------------------------|
| Novelty (N) | Yes: Claims | 3,4,9,11,15,16,21 |
| | No: Claims | 1,2,5-8,10,12-14,17-20,22-27 |
| Inventive step (IS) | Yes: Claims | 3,4,9,11,15,16,21 |
| | No: Claims | 1,2,5-8,10,12-14,17-20,22-27 |
| Industrial applicability (IA) | Yes: Claims | 1-27 |
| | No: Claims | |

2. Citations and explanations

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

- 1 Reference is made to the following documents:

D1: US-6223256 B1 (GAITHER BLAINE D) 24 April 2001 (2001-04-24)
D2: US 2002/062424 A1 (HSU PETER ET AL) 23 May 2002 (2002-05-23)
- 2 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

D1 discloses:

In a Constant Access Time Bounded cache (column 3, lines 21-25), a method comprising:
 - reserving a first number of unallocated lines in the cache for pinned data, the first number being less than the number of lines in the cache (column 4, lines 32-40); and
 - if data needs to be inserted into the cache as pinned data, selecting a line from the lines reserved for pinned data;
 - storing the data in the line; and
 - inserting the line into a search group of the CATB cache (claim 4).
- 3 The same reasoning applies, mutatis mutandis, to the subject-matter of the corresponding independent claims 8, 10, 12, 13, 20, 22, 25, which therefore are also considered not new.
- 4 Dependent claims 2, 5-7, 14, 17-19, 23, 24, 26 and 27 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty or inventive step, see documents D1 and D2 and the corresponding passages cited in the search report.
- 5 The combination of the features of dependent claims 3, 4, 9, 11, 15, 16 and 21 is neither

known from, nor rendered obvious by, the available prior art. The reasons are as follows:

Neither D1 nor D2 deal with recovering the organisation of a cache after a loss of power to the cache by determining in a first phase if each cache line is allocated, and if it is, inserting the line in a search group, otherwise inserting the line into a pool of free lines, and in a second phase of the recovery determining the number of pinned lines in each search group and adding at least one line from the pool of free lines to each search group that has at least one pinned line.